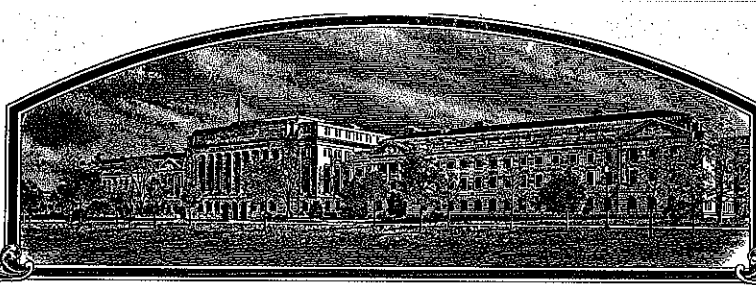


No.

200800051



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Syngenta Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REMISEMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR MOVING IT OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Lucan'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this seventeenth day of February, in the year two thousand and nine.

Attest:

Blm Z...
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

W J Vilsack
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER Syngenta Seeds, Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME		3. VARIETY NAME Lucan	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 6338 Highway 20-26 Nampa, ID 83687		5. TELEPHONE (include area code) 208-465-8522		FOR OFFICIAL USE ONLY PVPO NUMBER #200800051 FILING DATE December 13, 2007	
		6. FAX (include area code) 208-467-4559			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation		8. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		9. DATE OF INCORPORATION 02/25/1975	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Kim Briggs c/o Syngenta Seeds, Inc. 6338 Highway 20-26 Nampa, ID 83687				FILING AND EXAMINATION FEES: \$ 4,382.00 DATE 12/13/07 CERTIFICATION FEE: \$ 768 DATE 9/30/08	
11. TELEPHONE (include area code) 208-465-8522		12. FAX (include area code) 208-467-4559		13. E-MAIL kim.briggs@syngenta.com	
14. CROP KIND (Common Name) Lettuce		16. FAMILY NAME (Botanical) Compositae		18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP Lactuca sativa		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)				20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)				21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
				22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)				24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER Kim Briggs		SIGNATURE OF OWNER			
NAME (Please print or type) Kim Briggs		NAME (Please print or type)			
CAPACITY OR TITLE PVP Specialist		DATE 12/04/2007		CAPACITY OR TITLE 	
				DATE 	

(See reverse for instructions and information collection burden statement)

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. **Retain one copy for your files.** All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 - (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

1st sold in Germany on June 30, 2006.

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent). **PVR - European Comm. - EU 20080 12-23-05.** Filed on
 Natl. List - European Community - NL15908. Filed on 02-01-05; Natl. List - Netherlands - 22384. Filed on 02-01-05.

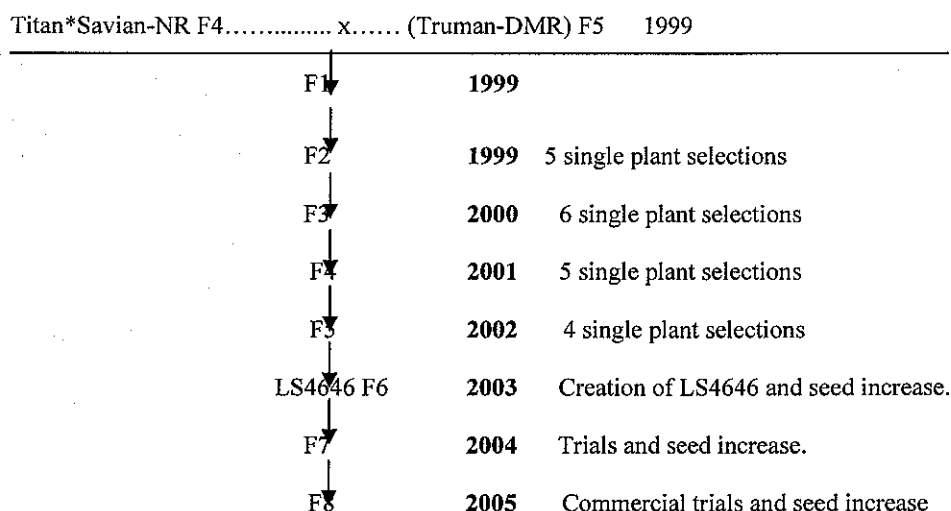
According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

LETTUCE**LUCAN (LS4646)****EXHIBIT A****ORIGIN AND BREEDING HISTORY**

The objective in the development of Syngenta Seeds lettuce variety Lucan was to breed a butterhead type with improved resistance to downy mildew, the lettuce aphid (*Nasonovia ribisnigri*) and LMV.



Lucan is derived from a 1999 cross between the *Nasonovia* resistant breeding line (Titan/Savian-NR)F4 and the breeding line (Truman-DMR)F5. All three varieties, Titan, Savian and Truman are butterhead varieties with resistance to some races of downy mildew. Titan and Truman are resistant to European races BI 1-20, 22-24 and Savian is resistant to BI 1-11, 13-15, 17, 19, 22.

F2 seed was planted in 1999 and the seedlings were inoculated with lettuce downy mildew and *Nasonovia ribisnigri*. Resistant plants were selected for advancement to F3.

F3 seed was collected from individual F2 plants in 1999. Each F3 was sown and inoculated again with lettuce downy mildew and *Nasonovia*. Only F3 lines homozygous for resistance were continued. Individual plants were selected in the F3's for the right butterhead type and uniformity.

The same selection procedure was followed in the F4 lines in 2001 and on the F5 lines in 2002. F5s were also checked for LMV-resistance

The most uniform F6 was named LS4646. Trials were done at several locations and in different seasons.

Lucan has been observed through 3 generations (F6, F7, F8) of reproduction and was found to be uniform and stable. No variants have been observed.

The breeding method used was pedigree selection, using single plant selection and mass selection practices.

LETTUCE

LUCAN (LS4646)

EXHIBIT B

NOVELTY STATEMENT

Lucan is most similar to Martin, however Lucan is distinctly different because it carries the Nr gene for resistance to the lettuce aphid, *Nasonovia ribisnigri*, whereas Martin does not have this gene and is therefore susceptible.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Lettuce (*Lactuca sativa* L.)

NAME OF APPLICANT (S) Syngenta Seeds, Inc.	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME <i>Lucan</i>
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country) <i>6338 Highway 20-26 Nampa, ID 83687</i>		FOR OFFICIAL USE ONLY PVPO NUMBER <i>#200800051</i>

Place the appropriate number that describes the varietal character in the boxes below. Place a zero in the first box (e.g. or) when number is either 99 or less or 9 or less. Measured data should be the mean of an appropriate number (at least 20) of well space plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The Location of the Test Area is:

Gilroy, CA

Color System Used:

RHS Color Chart

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties, which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

Application Variety (a1) *Lucan* Most Similar Variety (c1) *Martin*Standard Regional Check Variety (c2) *Bennett*

1. PLANT TYPE: (See List of Suggested Check Varieties on Page 8)

01 = Cutting/Leaf
02 = Butterhead
03 = Bibb

04 = Cos or Romaine
05 = Great Lakes Group
06 = Vanguard Group

07 = Salinas Group
08 = Eastern (Ithaca) Group
09 = Stem

10 = Latin
11 = Other (Specify) _____

(a1) (c1) (c2)

2. SEED:

(a1) } COLOR
(c1) } 1 = White (Silver Gray)
2 = Black (Grey Brown)
(c2) } 3 = Brown (Amber)

(a1) } LIGHT DORMANCY
(c1) } 1 = Light Required
2 = Light Not Required
(c2) }

(a1) } HEAT DORMANCY
(c1) } 1 = Susceptible
2 = Not Susceptible
(c2) }

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day-old seedling grown under optimal conditions.

SHAPE OF COTYLEDONS: 1 = Broad

2 = Intermediate

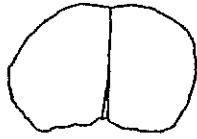
3 = Spatulate

(a1) (c1) (c2)

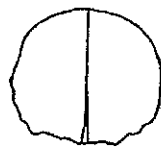
SHAPE OF FOURTH LEAF:

(a1) (c1) (c2)

3. COTYLEDON TO FOURTH LEAF STAGE: (continued)



1. Transverse oval



2. Round



3. Oval



4. Elongated



5. Lanceolate



6. Pinnately lobed

LENGTH/WIDTH INDEX OF FOURTH LEAF: LW x 10

(a1) (c1) (c2)

APICAL MARGIN:

1 = Entire
2 = Crenate/Gnawed
3 = Finely Dentate4 = Moderately Dentate
5 = Coarsely Dentate
6 = Incised7 = Lobed
8 = Other (Specify) _____(a1) (c1) (c2)

BASAL MARGIN: (Use the options for Apical Margin above)

(a1) (c1) (c2)

UNDULATION:

1 = Flat

2 = Slight

3 = Medium

4 = Marked

(a1) (c1) (c2)

GREEN COLOR:

1 = Yellow Green
2 = Light Green3 = Medium Green
4 = Dark Green5 = Blue Green
6 = Silver Green

7 = Grey Green

(a1) (c1) (c2)

ANTHOCYANIN:

DISTRIBUTION:

1 = Absent
2 = Margin Only3 = Spotted
4 = Throughout

5 = Other (Specify) _____

(a1) (c1) (c2)

CONCENTRATION:

1 = Light

2 = Moderate

3 = Intense

(a1) (c1) (c2)

ROLLING:

1 = Absent

2 = Present

(a1) (c1) (c2)

CUPPING:

1 = Uncupped

2 = Slight

3 = Markedly

(a1) (c1) (c2)

REFLEXING:

1 = None

2 = Apical Margin

3 = Lateral Margins

(a1) (c1) (c2)

4. MATURE LEAVES (Observe Harvest-Mature Outer Leaves)

NOTE: Provide color photo of a harvest-mature leaf which accurately shows color and margin characteristics.

MARGIN:**INCISION DEPTH:**
(deepest penetration
of the margin)

1 = Absent/Shallow (Dark Green Boston)

2 = Moderate (Vanguard)

3 = Deep (Great Lakes 659)

(a1)

(c1)

(c2)

INDENTATION: (Finest divisions of the margin)

1 = Entire (Dark Green Boston)

4 = Crenate (Vanguard)

2 = Shallowly Dentate (Great Lakes 65)

5 = Other (Specify) _____

3 = Deeply Dentate (Great Lakes 659)

(a1)

(c1)

(c2)

**UNDULATIONS OF THE
APICAL MARGIN:**

1 = Absent/Slight (Dark Green Boston) 2 = Moderate (Vanguard)

3 = Strong (Great Lakes 659)

(a1)

(c1)

(c2)

GREEN COLOR:

1 = Very Light Green (Bibb)

3 = Medium Green (Great Lakes)

5 = Very Dark Green

2 = Light Green (Minetto)

4 = Dark Green (Vanguard)

6 = Other (Specify) _____

(a1)

(c1)

(c2)

ANTHOCYANIN:**DISTRIBUTION:**

1 = Absent

3 = Spotted (California Cream Butter)

5 = Other (Specify) _____

2 = Margin Only (Big Boston)

4 = Throughout (Prize Head)

(a1)

(c1)

(c2)

CONCENTRATION:

1 = Light (Iceberg)

2 = Moderate (Prize Head) 3 = Intense (Ruby)

(a1)

(c1)

(c2)

SIZE:

1 = Small

2 = Medium

3 = Large

(a1)

(c1)

(c2)

GLOSSINESS:

1 = Dull (Vanguard)

2 = Moderate (Salinas)

3 = Glossy (Great Lakes)

(a1)

(c1)

(c2)

BLISTERING:1 = Absent/Slight
(Salinas)2 = Moderate
(Vanguard)3 = Strong
(Prize Head)

(a1)

(c1)

(c2)

LEAF THICKNESS:

1 = Thin

2 = Intermediate

3 = Thick

(a1)

(c1)

(c2)

TRICHOMES:

1 = Absent (Smooth)

2 = Present (Spiny)

(a1)

(c1)

(c2)

5. PLANT:**SPREAD OF FRAME LEAVES:**

(a1)

cm

(c1)

cm

(c2)

cm

5. PLANT: (continued)

HEAD DIAMETER: (Market Trimmed with Single Cap Leaf)

(a1) cm(c1) cm(c2) cm

HEAD SHAPE:

1 = Flattened

3 = Spherical

5 = Non-Heading

2 = Slightly Flattened

4 = Elongate

6 = Other (Specify) _____

(a1) (c1) (c2)

HEAD SIZE CLASS:

1 = Small

2 = Medium

3 = Large

(a1) (c1) (c2)

HEAD PER CARTON:

(a1) (c1) (c2)

HEAD WEIGHT:

(a1) g.(c1) g.(c2) g.

HEAD FIRMNESS:

1 = Loose

2 = Moderate

3 = Firm

4 = Very Firm

(a1) (c1) (c2)

6. BUTT:

SHAPE:

1 = Slightly Concave

2 = Flat

3 = Rounded

(a1) (c1) (c2)

MIDRIB:

1 = Flattened (Salinas)

2 = Moderately Raised

3 = Prominently Raised (Great Lakes 659)

(a1) (c1) (c2)

7. CORE:

DIAMETER AT BASE OF HEAD:

(a1) mm(c1) mm(c2) mm

RATIO OF HEAD DIAMETER/CORE DIAMETER:

(a1) (c1) (c2)

CORE HEIGHT FROM BASE OF HEAD TO APEX:

(a1) mm(c1) mm(c2) mm8. BOLTING: (Give First Water Date: 05/09/2007)

NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

NUMBER OF DAYS FROM FIRST WATER DATE TO SEED STALK EMERGENCE: (summer conditions)

(a1) (c1) (c2)

BOLTING CLASS:

1 = Very Slow

3 = Medium

5 = Very Rapid

2 = Slow

4 = Rapid

(a1) (c1) (c2)

HEIGHT OF MATURE SEED STALK:

(a1) cm (c1) cm (c2) cm

8. BOLTING: (continued)

SPREAD OF BOLTER PLANT: (At widest point)

(a1) 48 cm (c1) 53 cm (c2) 43 cm

BOLTER LEAVES: 1 = Straight 2 = Curved

(a1) 2 (c1) 2 (c2) 2

MARGIN: 1 = Entire 2 = Dentate

(a1) 2 (c1) 1 (c2) 1

COLOR: 1 = Light Green 2 = Medium Green 3 = Dark Green

(a1) 3 (c1) 3 (c2) 3

BOLTER HABIT:

TERMINAL INFLORESCENCE: 1 = Absent 2 = Present

(a1) 2 (c1) 2 (c2) 2

LATERAL SHOOTS: 1 = Absent 2 = Present

(a1) 1 (c1) 1 (c2) 1

BASAL SIDE SHOOTS: 1 = Absent 2 = Present

(a1) 2 (c1) 2 (c2) 2

9. MATURITY: (earliness of harvest-mature head formation)

NOTE: Complete this section for at least one season.

SEASON	APPLICATION VARIETY No. of Days ¹			MOST SIMILAR VARIETY No. of Days ¹			STANDARD REGIONAL CHECK VARIETY No. of Days ¹		
Spring	<u>71</u>			<u>71</u>			<u>71</u>		
Summer	<u>48</u>			<u>48</u>			<u>48</u>		
Fall									
Winter									

¹ First Water Date to Harvest

Give Planting Date(s) and Location(s):

Spring: 02/19/2007 Gilroy, CASummer: 05/09/2007 Gilroy, CA

Fall: _____

Winter: _____

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTATION (tested and proven adapted):

0 = Not Tested 1 = Not Adapted 2 = Adapted

☒ Southwest (CA and/or AZ desert)
 ☒ West Coast
 ☒ Northeast

☒ North Central
 ☒ Southeast
 ☐ Other (Specify) _____

10. ADAPTATION: (Continued)

SEASON:



Spring

(Area Salinas Valley, CA)

Fall

(Area Salinas Valley, CA)

Summer

(Area Salinas Valley, CA)

Winter

(Area _____)



GREENHOUSE:

0 = Not Tested

1 = Not Adapted

2 = Adapted



SOIL TYPE:

1 = Mineral

2 = Organic

3 = Both

11. VIRAL DISEASES:

1 = Immune

3 = Resistant

5 = Moderately Resistant/Moderately Susceptible

7 = Susceptible

9 = Highly Susceptible

Big Vein

(a1)

☐

(c1)

☐

(c2)

☐

Lettuce Mosaic

(a1)

☐

(c1)

☐

(c2)

☐

Cucumber Mosaic

(a1)

☐

(c1)

☐

(c2)

☐

Tomato Bushy Stunt, cause of dieback

(a1)

☐

(c1)

☐

(c2)

☐

Turnip Mosaic

(a1)

☐

(c1)

☐

(c2)

☐

Beet Western Yellows

(a1)

☐

(c1)

☐

(c2)

☐

Lettuce Infectious Yellows

(a1)

☐

(c1)

☐

(c2)

☐

Other (Specify) _____

(a1)

☐

(c1)

☐

(c2)

☐

12. FUNGAL/BACTERIAL DISEASES:

1 = Immune

3 = Resistant

5 = Moderately Resistant/Moderately Susceptible

7 = Susceptible

9 = Highly Susceptible

Corky Root Rot

(a1)

☐

(c1)

☐

(c2)

☐

(Races: _____)

Downy Mildew

(a1)

☐

(c1)

☐

(c2)

☐(Races: CA, IIA, IIB, III, V, VI, VII, VIII)

Powdery Mildew

(a1)

☐

(c1)

☐

(c2)

☐

Sclerotinia Drop

(a1)

☐

(c1)

☐

(c2)

☐

Bacterial Soft Rot

(a1)

☐

(c1)

☐

(c2)

(Pseudomonas spp. and others)

Botrytis (Grey Mold)

(a1)

☐

(c1)

☐

(c2)

☐

Verticillium Wilt

(a1)

☐

(c1)

☐

(c2)

☐

Bacterial Leaf Spot

(a1)

☐

(c1)

☐

(c2)

☐

Anthracnose

(a1)

☐

(c1)

☐

(c2)

☐

Other (Specify) _____

(a1)

☐

(c1)

☐

(c2)

☐

13. INSECTS:

1 = Immune

3 = Resistant

5 = Moderately Resistant/Moderately Susceptible

7 = Susceptible

9 = Highly Susceptible

Cabbage Loopers

(a1)

☐

(c1)

☐

(c2)

☐

Root Aphids

(a1)

☐

(c1)

☐

(c2)

☐

Green Peach Aphid

(a1)

☐

(c1)

☐

(c2)

☐

Lettuce Aphid

(a1)

☐

(c1)

☐

(c2)

☐

Pea Leafminer

(a1)

☐

(c1)

☐

(c2)

☐

Other (Specify) _____

(a1)

☐

(c1)

☐

(c2)

☐**14. PHYSIOLOGICAL STRESSES:**

1 = Immune

3 = Resistant

5 = Moderately Resistant/Moderately Susceptible

7 = Susceptible

9 = Highly Susceptible

Tipburn

(a1)

☐

(c1)

☐

(c2)

☐

Heat

(a1)

☐

(c1)

☐

(c2)

☐

Drought

(a1)

☐

(c1)

☐

(c2)

☐

Cold

(a1)

☐

(c1)

☐

(c2)

☐

Salt

(a1)

☐

(c1)

☐

(c2)

☐

Brown Rib

(a1)

☐

(c1)

☐

(c2)

☐

(Rib Discoloration, Rib Blight)

Other (Specify) _____

(a1)

☐

(c1)

☐

(c2)

☐**15. POST HARVEST STRESS:**

1 = Immune

3 = Resistant

5 = Moderately Resistant/Moderately Susceptible

7 = Susceptible

9 = Highly Susceptible

Pink Rib

(a1)

☐

(c1)

☐

(c2)

☐

Russet Spotting

(a1)

☐

(c1)

☐

(c2)

☐

Rusty Brown Discoloration

(a1)

☐

(c1)

☐

(c2)

☐

Internal Rib Necrosis

(a1)

☐

(c1)

☐

(c2)

☐

(Blackheart, Grey Rib, Grey Streak)

Brown Stain

(a1)

☐

(c1)

☐

(c2)

☐**16. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:**

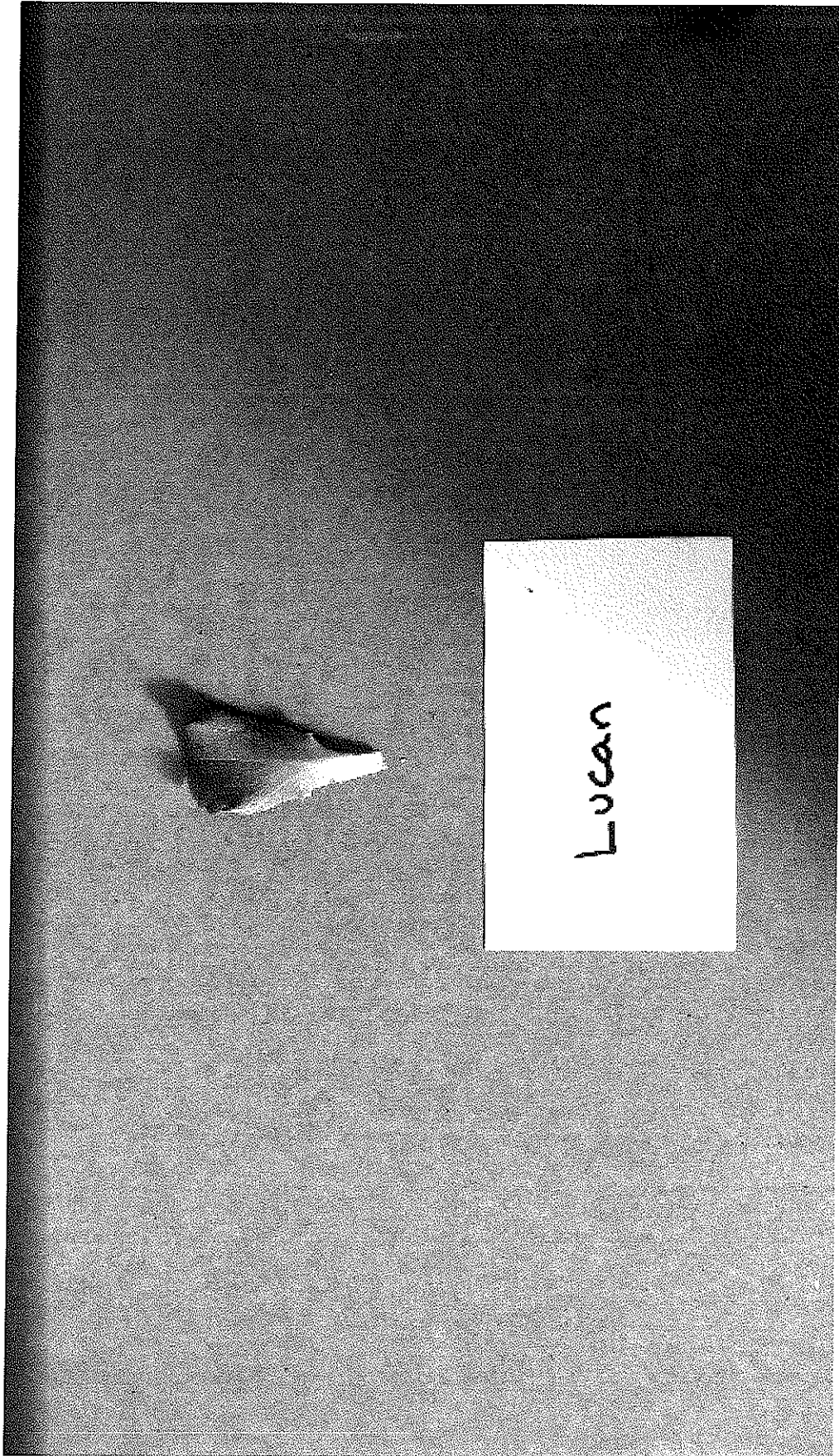
17. COMMENTS:

SUGGESTED CHECK VARIETIES

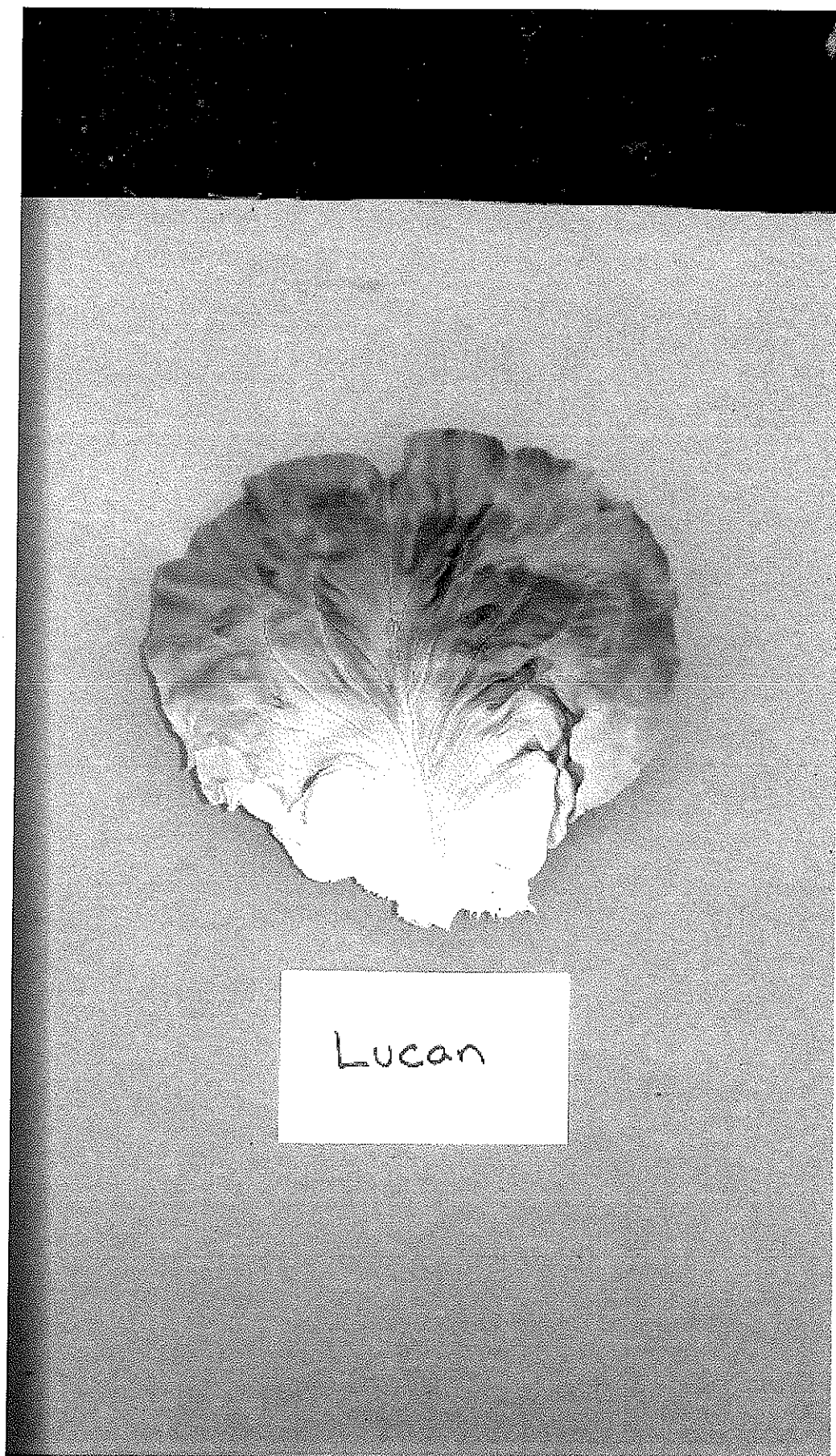
<u>TYPE</u>	<u>CHECK VARIETY</u>
1 Cutting/Leaf	Waldmann's Green
2 Butterhead	Dark Green Boston
3 Bibb	Bibb
4 Cos or Romain	Parris Island
5 Great Lakes Group	Great Lakes 659-700
6 Vanguard Group	Vanguard
7 Salinas Group	Salinas
8 Eastern Group	Ithaca
9 Stem	Celtuce
10 Latin	Little Gem

REFERENCES

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- Michelmore, R.W., J. M. Norwood, D.S. Ingram, I.R. Crute and P. Nicholson. 1984. "The inheritance of virulence in *Bremia lactucae* to match resistance factors 3, 4, 5, 6, 8, 9, 10, and 11 in lettuce (*Lactuca sativa*)". Plant Pathology 32:176-177.
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- Rodenburg, C.M., et al., 1960. "Varieties of Lettuce. An International Monograph", Instituut voor de Verdeling van Tuinbouwgewassen (IVT), Wageningen, NL.
- Ryder, E.J., 1999, *Lettuce, Endive, and Chicory*, CABI Publications, Wallingford, UK.



4th leaf stage



Maturity

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE**EXHIBIT E**
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Syngenta Seeds, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME Lucan
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 6338 Highway 20-26 Nampa, ID 83687	5. TELEPHONE (Include area code) (208) 465-8522	6. FAX (Include area code) (208) 467-4559
7. PVPO NUMBER #200800051		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

Lucan was bred and developed by plant breeders employed by Syngenta Seeds, Inc. By agreement between the employee and Syngenta Seeds, Inc., all rights to any invention, discovery or development made by the employee while employed by Syngenta Seeds, Inc. were assigned to Syngenta Seeds, Inc., with no rights retained by the employee.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

**EXHIBIT F
DECLARATION REGARDING DEPOSIT**

NAME OF OWNER (S) Syngenta Seeds, Inc.	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 6338 Highway 20-26 Nampa, ID 83687	TEMPORARY OR EXPERIMENTAL DESIGNATION VARIETY NAME Lucan
NAME OF OWNER REPRESENTATIVE (S) Kim Briggs	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 6338 Highway 20-26 Nampa, ID 83687	FOR OFFICIAL USE ONLY PVPO NUMBER #200800051

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Kim Briggs
Signature

12-04-2007
Date